

NEOLITHIC TECHNOLOGY OF CERAMIC PRODUCTION AT YANGSHAO, CHINA

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ABSTRACT

This research paper deals with Neolithic era pottery making, ceramic traditions, social and religious significance of pottery at Yangshao, the most important site of Chinese Neolithic era. This research has been extracted from the M.Phil. Thesis of author titled as "Comparative study of Mehrgarh Neolithic pottery 6500-4500BC and Yangshao pottery of Chinese Neolithic 5500-3000 BC". This paper explores the early technological adoption of ancient Chinese as the surplus crop production grew, significantly it brought remarkable changes to Yangshao and Banpo people's life, which familiarized early Chinese toward trade and traditional technology. Yellow river a rich source of perennial water helped ancient chines to grow multiple cereals crops mostly the rice. This agricultural boost gave expansion of Neolithic settlements, traditions and technology, Yangshao is said to be the mother of ancient Chinese civilization in south Asia. Sophisticated technology of Yangshao and Banpo potters with variety of pottery objects including open pots, tripods, bowels and amphora made them more versatile potters in Neolithic era.

Keywords: Yangshao, Banpo, Neolithic, Handmade Pottery

1.1 INTRODUCTION

China geographically stretches over 3.7 million square miles, mountains of Pamir are almost 2500 miles to west of pacific in south, border are extended to Amur River in north up to Indonesian borders. This vast civilization has different climatic zones, thick green forests with variety of grasses. In north west lies the high Tibetan plateau, in east Temperate river valleys are there, valleys and mountains has kept Chinese more closer & unified since ancient time up to date, Yangtze and Yellow rivers made agricultural lands more fertile for farming, which are up to middle and lower Chines region (Bell, Wood 2005). Holocene in this region created both favorable and challenging environmental conditions. Studies on

Yiluo River in Henan province suggests the beginning of habitable landscape with raised water tables at the earliest of Holocene start, Peilging communities of Neolithic changed their occupation during Yangshao culture. North and south being important divisions of Chinese yellow river covers north China, Rivers along with water also transported the useful minerals helpful for enhancing land fertility and crop production. The mountains of Tsingling apart the Yellow and Yangtze rivers. The region of Zhu Jiang and Yangtze River area constitute southern Chinese regions. Southern Chinese regions receive excessive rain with temperate winter and hot summer resulting multiple crop seasons along with

variety of cereals , riverine animals, ponds , lakes creates biological diversity (*Upsher, Terry, Holaka, Goff, Casser 2002:59*)

1.2 Research Methodology

The paper follows the qualitative research methods to find out Yangshao and Banpo pottery traditions and manufacturing methods, this study is based on excavation reports, Museum visits and other secondary source of supportive literature. Typological classification of objects proved helpful to analyze the different aspects of Yangshao and Banpo pottery accordingly.

1.3 Literature Review.

Peter Jordan and **Mark Zvelebil**, argued that after Pleistocene and during Holocene early Chines pottery has cultural and conventional significance (*Chi2002:30; Pearson 2005:822; Zhao and Wu 2000*)

Brian Hograh says Neolithic site of Yangshao was scientifically excavated in 1921 located in the village of Yangshao, generally, the communities are known behind the culture existed in particular place, through that they had managed their livelihood.

P. Atahan, F Hzstein-Davey, D Taylor Dodson el at are of opinion that rivers has played important role in fertility of agricultural lands, lands of Yangshao were watered by the central eastern river of China, Yangshao communities were considered advanced forming communities.(*Bell Wood 2005*)

Upsher, Terry, Holaka, et al argued that forming and domestication of animal were key role factors for sustainable early human lives, in Chines regions pottery existed in 7000 BCE, due to geographical settings communities couldn't mingled with each other up to 4000 BCE, some

communities raised as autonomous cultures and civilizations.

Guilford argued that peoples of Longshan resided in east of yellow river, Neolithic culture of Yangshao was expended to west of same river, Longshan potters used wheel for pottery manufacturing, thin, fine, dark, black pottery of different sizes.

Christian E. Peterson: said that most of Chines prehistoric sites are well studied and documented, specially the Yangshao, through material analysis much is known about them but still their socio economical structure couldn't be answered. One of the greatest Yangshao discovery was the dietary habits, they used to eat chicken, dogs, fishes, shell fishes, pigs and millet. (*Bettinger at al 2007*)

1.3 Geographical Location of Yangshao Site: The regions of Hunan and Shansi are known for Chinese Neolithic sites, ever largest site of Chinese Neolithic is Yangshao covering an area about 100, 0000 square meters inclusive of flat area consisting 12 - 16 meters high Neolithic cultural mounds. Architectural pattern at Banpo site of Yangshao culture is considered remarkable in southern Shensi regions. The remains of Yangshao are usually along with yellow river, the first appearance of Yangshao material culture was found in Yangshao in Henan during 1921, Yangshao pottery is usually painted in red color, that particular period is known for painted pottery culture. Shanxi region along with yellow river has more than four hundred Yangshao culture sites. Terracotta objects including pottery were manufactured with red color sandy clay, ther artifacts like axes, adze, knife and number of bone artifacts has been discovered. Carbon -14 date for Yangshao is from 5000-3000 BCE.

1.4 Map of Yangshao Neolithic China.

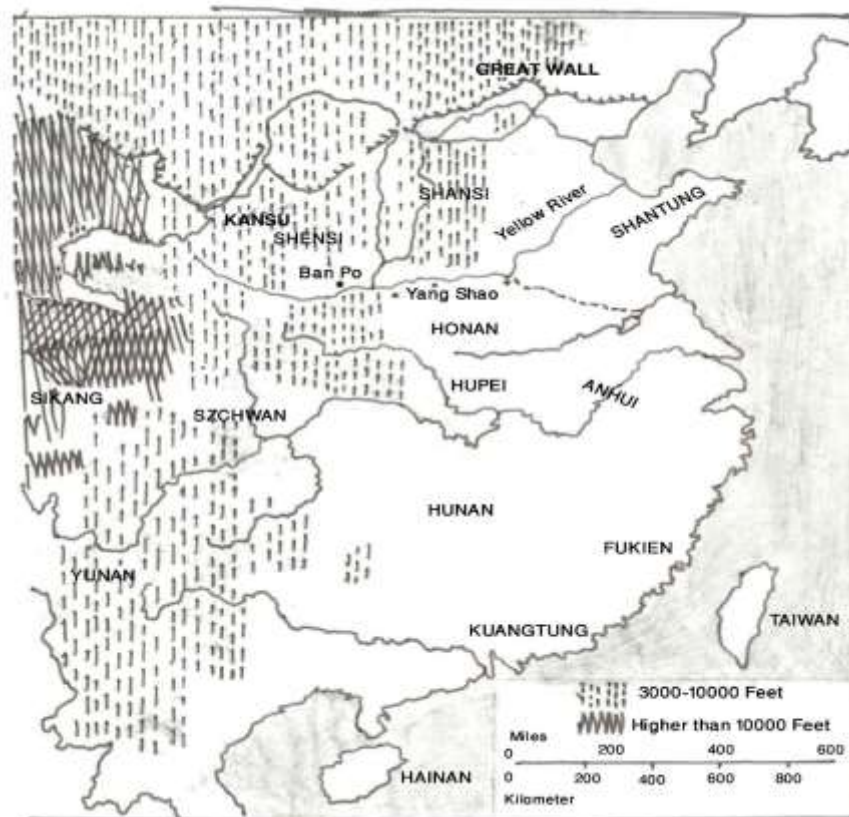


Fig No.01

Map showing the Yangshao culture Neolithic sites)

Source: Author

1.5 Emergence of Early Pottery Making in Chinese Region

Major cultural and technological changes accrued in Chinese during Paleolithic period, micro lithic artifacts were abundantly discovered in northern regions and in south of Nanling mountains, evidence of cave peoples were also discovered nearby the areas of Karst river.

Early pottery along with cultural traditions was found in different Chinese regions during the period of late Pleistocene and start of Holocene (chi 2002:30; Pearson 2005:822; Zhao and Wu 2000). Remarkable early Chinese pottery designs and patterns consisted strokes, cord mark with round base jars were discovered from southern China, dating 13700-13250 BP. Contrary, pottery with flat base of Northern & Southern China was

discovered much late as compared to the pottery found in Far East, Japan and Russia (chi 2002:29). Wu and Zhao has done great job regarding making carbon dating on early pottery, in the light of carbon dates earliest Chinese pottery workshops emerged during Pleistocene and Holocene as transitional period during (14000- 9000 (Pearson 2005:822) and may be more earlier then the onset of climatic changes and warming in the end of Pleistocene (Barker 2006:187-188,288; Zhao and Wu 2000:239). More specifically the evidences for early pottery making, hunter gatherers, experiments and transformation in organized early life mark the end timeline of Paleolithic period (Feng 2002:230)

In the Yuchanyan cave shows the artifact assemblage which was made through the coil

method with round base with paddle marks to flatten the pot walls, heap of artifacts were discovered from the lower levels (chi 1999:7,200:234). Majority of pottery objects are dark brown in color with quartz grit the walls and uneven in thickness measuring 5mm to 20 mm of fully restored pottery vessel with wider mouthed cauldron (Zhao and Wu 2000;234)

1.7 Banpo site: Banpo is Yangshao culture site which was found in 1953, Banpo site has an area of 50,000 square meters, this Neolithic site was excavated from 1954 to 1957. The site has six cultural phases. Excavation results revealed that site has three major settlement divisions including residential area, potters area and cemetery. After the excavation the number of discovered artifacts were up to ten thousands, consisting pottery, manufacturing tool and other stone tools.

For human survival, the suitable environmental conditions were key factor, environmental conditions of Banpo are analyzed through faunal evidence, around 6000 years ago climate was much warmer with moist, Ba and Chan rivers carried plenty of water.

Banpo never faced any water shortage ever, in east of Banpo deer plateau lies with thickly lush green mountain of Zhongnan are located in south of the site. Suitable environmental conditions favored for farming, hunting, fishing, pottery making and constructing houses, which encouraged them to lead an organized life. Archeological studies determine women's key role in crop management and distribution along with their household responsibilities. Exuberance evidences are on record that pottery jars were also been used for keeping seeds safe, seeds of millet, cabbage and other cereals were also found from the pottery vessels. Men usually were master in animal hunting, acquiring animal skin, fur to meet food & dress requirements.

Banpo Pottery: Early pottery of Banpo site was handmade in red color, pottery was made through the ring method, pottery included variety of cooking pots, food, storage jars and water containers were manufactured in abundance for routine usage.

Ring method of pottery can be interpreted as same to coil method, through this method long clay rolls were used to make pottery objects, at Banpo site the pottery objects made with ring method were finalized and softened with knife shape tools made of bones, after finishing the pottery objects were baked in kilns. Potter of Banpo used two types of kilns for baking pottery objects, horizontal and vertical. At Banpo six large kilns were discovered in eastern part of the site, Banpo potters used horizontal kilns in early times, vertical kilns were considered advance which could maintained high temperature ranging from 900-1000 c. Banpo potter had variety of designs and pottery patterns but fish design was frequently found on pots, Banpo peoples mostly used to live near by the river. Other pottery designs included deer, fishes, river, Mountain, mats. String and nail impressions, pots were decorated internally and externally from base to top.

1.8 Pottery making methods at Yangshao.

Traditional methods of pottery making i.e. moulding and coil method were followed by early Yangshao potters (Howard Spodek *The world's History2000* Volume 1: to 1500Pp 1-10). The Yangshao potters were enough expert to control temperature up to 1450c in kilns, while during making pottery objects stone and wooden instruments were being used. Yangshao potters depicted birds, fishes and plants on pottery objects, variety of pottery object were made ranging from small to large size, bowls, pots and large urns were manufactured. Major Chinese Neolithic sites like Yangshao, Majiayao and Longshan are famously known.

Yangshao potters made variety of fine painted pottery range but the pottery of Longshan had much sophisticated range of wheel made pottery, well colored and finished pottery. Hence the orange, red, yellow and black color were used in Yangshao, simply it can be said that Yangshao pottery was poly chrome with spiral designs. (. Irina Z hushchikovskaya, Olga Danitova, *Spiral patterns on the Neolithic pottery of East Asia and Far East. Institute of history, archaeology and ethnology of peoples of the far east-Russia*). Yangshao peoples also

manufactured grey ware pottery along with other pottery types, Pan Shan peoples of Yangshao culture about three thousands BCE manufactured urns and other pottery objects with geometrical designs, though there was major difference in pottery making methods and pattern of western and eastern China (Maxwell Hearn, Wen Fong. *The arts of ancient China* P 1 – 4). Expertise of Yangshao potters were commendable, brush strokes, geometrical designs, animal motives, anthropogenic images are known significant in Chinese Neolithic pottery. Behind beautiful and perfect pottery baking a careful inspection of pottery was being done before sending them to kilns. The Shansi, Honan, Kansu and Shensi regions are famous for producing pottery baked on low temperature with multiple designs. Hence the pottery of Yangshao was made on coil method and was baked at 1000c, iron oxide was mixed with grinded pottery to make colors. (Fong chow *Yangshao Urn* (From the metropolitan museum of art) P -1)

1.9 Social and Economic life of Banpo peoples:

During 6000 BCE large number of animals were documented and Banpo peoples hunted the variety of animals, large number of bones prove the collective hunting tradition with stone spear and arrows were used for hunting, Sika dotted deer was the favorable hunt of Banpo peoples parallel with hunting peoples of Banpo cultivated different crops, more commonly the cabbage and other vegetation.

Fishing: Chan river flowed to west of Banpo, full of water and fishes, no evidence of net had been discovered, net might have vanished as it might had been manufactured through fiber net but net design pottery confirms the presence of net, the fishing implements like harpoons, barbs, and hook were found .

Dresses: The peoples of Banpo used to wear the dresses made of linen, linen was stitched through the bone needles, eighty two bone made needles were discovered, and few pieces of linen fabric were discovered inside the pottery jars. Availability of linen and bone made needles are sufficient evidence to understand that the peoples of Banpo knew weaving and sewing during the Neolithic era.

Houses at Banpo: Banpo site was stretched over up to 30000 meters, almost the evidences of forty seven houses were recorded, architectural pattern of houses was not uniform, some houses were round and some rectangular, a large moat was around the settlement for protection, some of large houses were used as shelter house for older and children, some large structures were used as assembly halls for communal discussions.

Cemetery: in north of Banpo village the cemetery laid, more than 175 graves were documented and excavated, males and females were buried separately, it is also noticed that Banpo peoples did not buried their children in graveyard but had put them in large jars nearer to their houses, Banpo peoples thought that small children even after death needed care. Elderly peoples were buried in graveyard positioning their face to west believing soul of dead would travel to other world if its direction is to west. Deceased were buried twice, once for body decay secondly for collecting bone remains, the body was buried for second time, and peoples of Banpo buried their dead along with grave goods.

Banpo art: 6000 ago in Banpo site there was no idea of writing, one hundred fourteen symbols carved on pottery vessels were discovered, same kind of symbols carved on tortoise shell in Shang dynasty were discovered during 16-17th century BCE. These symbols are supposed to be the earliest form of ancient Chinese script.

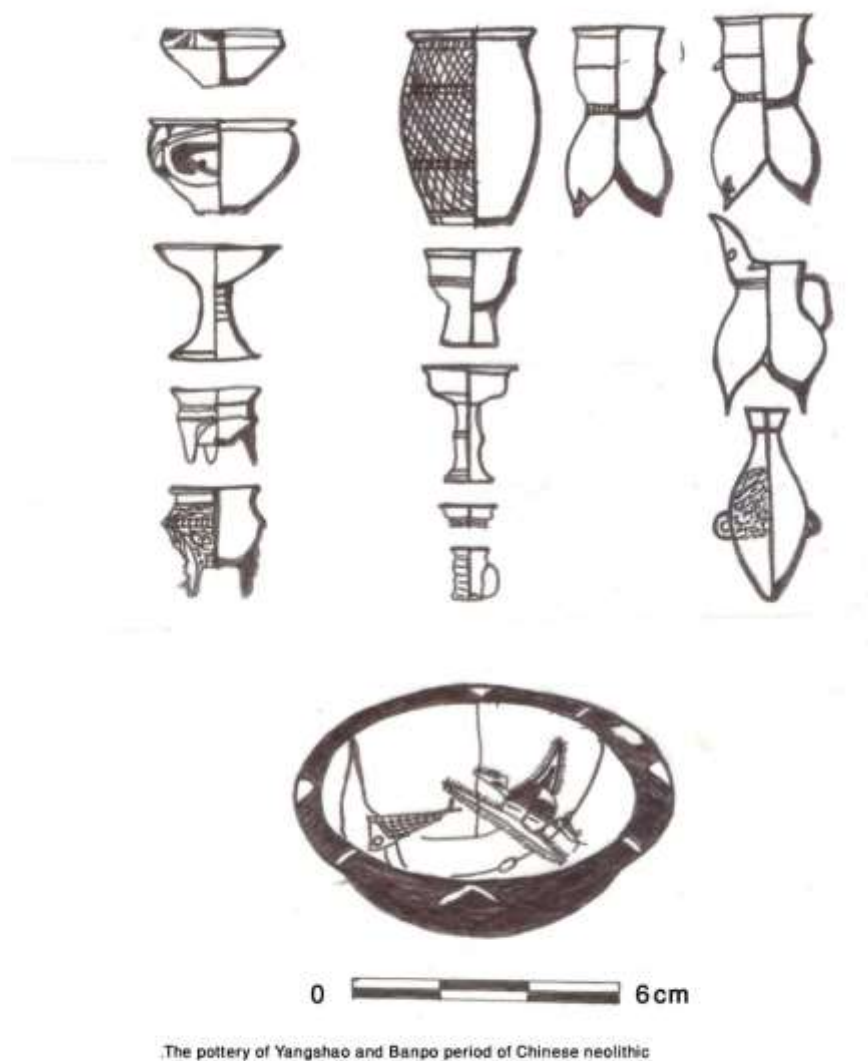


Fig No. 02
Tripod with stand, Open bowel with anthropogenic design
Source: Author



Fig No. 03



a-Cooking Pot with human face and fish images, Yangshao culture
b- Yangshao water Amphora)

[www.google.com.pk/images/Yangshao/neolithic pottery](https://www.google.com.pk/images/Yangshao/neolithic%20pottery)



Fig No. 04



- a. Open bowel with human images inside, Banpo pottery of Yangshao Period
- b. Open bowel of Banpo site.
- c. Decorative pattern on water pot of Yangshao Period.

[www.google.com.pk/images/Yangshao/neolithic pottery](https://www.google.com.pk/images/Yangshao/neolithic%20pottery)

1.10 Results

Pottery assessment of Yangshao and Banpo suggest skillfully manufactured Neolithic pottery traditions, usually the handmade pottery through coil method whose gaps were carefully sealed,

pottery was made from carefully selected clay and baked in manageable temperature in kilns with and buff slip. Yangshao pottery had variety of designs particularly anthropogenic, spiral and

geometrical patterns with black colors on bowls, water amphora, pots with tripods and cooking vessels.

1.11 Conclusion: The pottery found from Yangshao and Banpo represent the technical and cultural history of northern and eastern China, Yangshao pottery was mostly made of light red sandy clay, usually the colors for pottery decoration were used orange, red, white, green and black (Polychrome). Coil, mould, ring and potter wheel methods were broadly applied for pottery making with controlled temperature ranging 1000-1400c. Horizontal and vertical kilns baked large variety of pottery objects including cooking vessels, open pots with tripods, bowls painted with human images, water amphora and large urns for storage represent the socio cultural, technical and artistic trends of Yangshao potters. Pan Po pottery of Yangshao culture had designs of frog, fishes and net, net designs are also frequent in number. Pottery of Banpo, Pan Po and Yangshao has helped to reconstruct the social life of south East Asian Neolithic farming communities which had sophisticated craft technology along with amazing polychrome pottery.

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